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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/670,839	09/28/2000	Shigeru Hosoe	02860.0656	7690

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EXAMINER

PSITOS, ARISTOTELIS M

ART UNIT	PAPER NUMBER
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2653

DATE MAILED: 03/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/670,839

Applicant(s)

HOSOE ET AL.

Examiner

Aristotelis M Psitos

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 November 2004.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8,10-18,22-26 and 28-30 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) all pending is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

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DETAILED ACTION

Applicants' response of 11/22/04 has been considered with the following results.

The application submits claims drawn to the following

I. an optical pickup device (system), claims 1-8,10-12 and an optical rec/repr.system claim

25

II. An optical element, claims 13-18,22-24 & 30

III A molding surface, claim 16

IV. A method of manufacturing a molding die, claims 28 & 29.

The following position/rejection(s) are taken as discussed below.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. Claims 1-4,6,10 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda et al further considered with Hibino et al.

The following analysis is made:

Claim 1	Uedo('530)
An optical pickup device for recording and/or reproducing information in an optical information recording medium, comprising:	see abstract/title
a light source to emit light flux having a central wavelength not more than 500 nm ;	fig. 5, light source
a converging optical system to converge	figure 5, objective lens

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the light flux emitted from the light

source onto an information recording surface

recording medium present

of the optical information recording medium,

and

an optical detector to detect light flux reflected

inherently present, else

from the information-recording surface of the optical

system would not reproduce/read

information recording medium or the light flux passing

through the information recording surface of the optical

information recording medium,

wherein the converging optical system or

see secondary reference with respect to

the optical detector comprises at least

table 1 at col. 16, lines 25-54.

one optical element and the optical element comprises

at least one optical surface having a centerline mean

roughness Ra not more than 5 nm.

With respect to claim 1;

Ueda et al ('530) discloses an optical system for rec/repr. in which a laser beam of less than 500 nm is relied upon. This beam is projected onto a record medium through appropriate optical elements including an objective lens – see discussion with respect to figure 5. The examiner concludes that the system inherently provides for a detector – i.e., appropriate optical elements to reproduce/read the reflected light because the system is described as including/embracing an optical recording/reading method – see the abstract. Alternatively, if such an element is not inherently present, then under 103 considerations, the use of such a detector so as to reproduce the information from the record medium would be obvious to one of ordinary skill in the art so as to use the record medium of Ueda et al so as to reproduce such as recited on col. 16, lines 11-50.

There is no specific mentioning of the surface roughness of an optical element as recited.

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Hibino et al discloses/teaches in this environment an overall press molding process for manufacturing optical glass elements having very precise/smooth surfaces – see col. 2 lines 32 to 44 for instance. In fact, the appropriate surface roughness is further disclosed at col. 4, lines 50-52.

It would have been obvious to modify the base system of Ueda et al and modify such with the above teaching from Hibino et al, motivation is to provide for very smooth/precise optical elements used in the environment of Ueda et al. Such smooth/precise optical elements assist in reducing optical distortions in the optical beams.

With respect to claim 2, it is noted that the objective lens in Ueda et al has two surfaces. Hence the examiner concludes that the above combination of references met the limitations, i.e., that both surfaces (of the objective lens for instance) are as recited.

With respect to claim 3, the examiner interprets the objective lens as meeting this limitation.

With respect to claim 4, the examiner interprets the objective lens as meeting this limitation.

With respect to claim 6, the examiner interprets the materials disclosed in the Hibino et al reference as meeting this limitation.

With respect to claim 10, the objective lens is present in Ueda et al.

With respect to claim 25, see the above analysis with respect to claim 1. The elements as recited are met as analyzed above.

Response to Arguments

Applicant's arguments filed 11/22/04 have been fully considered but they are not persuasive. In particular, applicants' statement on pages 3-4 of their response dated 11/22/04 concludes that neither of the documents disclose the combination as claimed. However, why one reaches such a conclusion is not clear from the presented arguments.

Applicants' then continue to argue that in addition there is no reasons to combine the documents, As stated on page 4 first full paragraph of the above response.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings

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of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the rationale as stated above, i.e., the ability to provide for extremely smooth optical element surfaces. Such smooth surfaces yield a desired ability of reducing unwanted distortions into the light beam(s) both to and from the optical record.

2. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claim 1 as stated in paragraph 1 above, and further in view of Inoue et al.

The ability of selecting a resin or resin material for an optical element/lens is taught by the Inoue et al reference.

It would have been obvious to modify the base system as relied upon above with the additional teaching from Inoue et al, motivation is to reduce the overall weight of the optical system.

Response to Arguments

Applicant's arguments filed 11/22/04 have been fully considered but they are not persuasive. These dependent claims fall with their respective parent claim(s).

3. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claim 1 as stated in paragraph 1 above, and further in view of Sato et al.

The ability to provide for an optical lens with appropriate reflectance for the wavelengths in question is taught by the Sato et al reference - see the discussion of figures 1 and 2 for instance.

It would have been obvious to modify the base system of the references as relied upon above in paragraph 1 with the above teaching from Sato et al for the reasons stated in col. 1 line 39-55.

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Response to Arguments

Applicant's arguments filed 11/22/04 have been fully considered but they are not persuasive.

These dependent claims fall with their respective parent claim(s).

4. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claim 1 as stated in paragraph 1 above, and further in view of Ueda et al (6314064).

Claim 11 limits/identifies the optical element as being a collimating lens, while claim 12 limits it to an optical element used for the detection ability.

Ueda et al ('530) do not depict a collimating lens. Nevertheless, the use of collimating lens elements in this environment is further taught by the Ueda et al ('064) reference. Furthermore, the use of optical elements/as detectors is also taught by the Ueda et al ('064) reference.

It would have been obvious to modify the base system as relied upon in paragraph 1 above and further modify such a system to include a collimating lens as well as an optical lens for a detecting ability i.e., for their inherent use.

Providing this lens with similar/identical surface roughness is considered obvious, i.e., a manufacturer of the overall system would require an appropriate number of optical elements and since Hibino et al provides such smooth and precise optical elements, provision of multiple lenses for their various functional uses would be obvious – no need to order different lenses from different manufacturing sources.

Response to Arguments

Applicant's arguments filed 11/22/04 have been fully considered but they are not persuasive.

These dependent claims fall with their respective parent claim(s).

5. Claims 13-14,18,and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hibino et al further considered with Sato et al.

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Claim 13 and 30 are drawn to an optical element having at least one surface. This is considered present in the Hibino et al reference – see the discussion of manufacturing optical elements. Optical elements having appropriate surface roughness – as discussed at col. 4, lines 50-53 for instance.

With respect to claim 13, the remainder of the claim is written in descriptive functional language.

There is no specific mentioning in Hibino et al of any reflectance, although the use of reflective layers in the manufacturing technique is discussed.

Sato et al, teaches in this art the ability of placing/using/providing anti-reflection layers to reduce surface reflection.

Note in particular the description of figures 1 and 2. The noted wavelength and reflectance % are discussed.

It would have been obvious to modify the base system of Hibino et al with the above teaching from Sato et al, motivation is to reduce the overall surface reflection of the final optical element.

With respect to claim 14 and 16, although there is no discussion of plural surfaces, the examiner considers the final optical element available from the above combined references to have plural (two) surfaces.

With respect to claim 18, the material in Hibino et al is interpreted to meet this limitation.

With respect to claim 30, see the above analysis with respect to claim 13 and the description of the secondary reference focusing upon the wavelength and reflectance factors.

Response to Arguments

Applicant's arguments filed 11/22/04 have been fully considered but they are not persuasive for the reasons stated above with respect to the argument(s) against claim 1.

Also, the references are relied upon for what they teach, and In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

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6. Claims 15,16,22,23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claim 13 above, and further in view of Ueda et al ('064).

The above reference do not specify that the optical element is aspherical, an objective lens, a collimating lens, or a lens for a detector element.

Ueda et al discuss various lenses – objective, collimating, as well as those for detecting signals.

As known, objective lenses are aspherical.

It would have been obvious to modify the base system as stated above in paragraph 5 and use such optical elements/rely upon such for an optical system wherein objective lenses, collimating lens, and detecting lenses are normally needed in order to perform the overall optical pickup.

Response to Arguments

Applicant's arguments filed 11/22/04 have been fully considered but they are not persuasive.

These dependent claims fall with their respective parent claim(s).

7. Claim 26 is rejected under 35 U.S.C. 102(e) as being anticipated by Hibino et al.

As far as the examiner can determine, the molding surface of the press mold in Hibino et al meets the desired functional limitation described in the wherein clause of this claim. See the discussion with respect to col. 4 lines 50-53.

Response to Arguments

Applicant's arguments filed 11/22/04 have been fully considered but they are not persuasive.

These dependent claims fall with their respective parent claim(s).

8. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over either JP 11-268920, Hibino et al or Kashiwagi et al each further considered with WO 00/17691 (Yamagata et al).

JP 11-268920 teaches in this environment the ability of providing appropriate mechanism(s) to yield an optical element (lens) with an appropriate surface roughness range.

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Kashiwagi et al , teaches in this environment, appropriate mechanism(s) to yield an optical element (glass lens) having high surface accuracy with an appropriate surface roughness range – see the description of tables 1 for instance.

Hibino et al teaches in this environment appropriate mechanism(s) to yield an optical element with an appropriate surface roughness range.

There is no specific mentioning as to how the molds, which are used, are manufactured using diamond tools.

Yamagata et al – the US equivalent is provided to applicants as a translation of the WO document- disclose the normal ability in manufacturing a die molding for one piece lens precision cutting using diamond tools is widely in use.

It would have been obvious to modify the base system of either Jp 11-268920, Hibino et al or Kashiwagi et al with the above precision cutting using diamond tools motivation is to use widely used manufacturing abilities and hence save resources such as time in not having to redesign the tools to manufacture the dies.

Response to Arguments

Applicant's arguments filed 11/22/04 have been fully considered but they are not persuasive. These dependent claims fall with their respective parent claim(s).

9. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claim 28 above, and further in view of themselves.

Claim 29 recites the roundness of the diamond tool to be a within a certain range. Although this range is not described in the above references, that there is a physical dimension to the roundness of the diamond tool is considered inherent. Since the surface roughness range is defined by the primary references to JP 11-268920, Hibino et al or Kashiwagi et al, it logically follows that there is a range for the roundness of the diamond tool in order to yield the surface roughness range. Hence the examiner concludes that the range of roundness defined in claim 29 would be obvious to one of ordinary skill in the art in order to create a die for an optical lens having the recited surface roughness range.

Response to Arguments

Applicant's arguments filed 11/22/04 have been fully considered but they are not persuasive.

These dependent claims fall with their respective parent claim(s).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Miyazaki et al – see col. 14, lines 23-28 with respect to Ra values of less than 20 nm.

2. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aristotelis M Psitos whose telephone number is (571) 272-7594. The examiner can normally be reached on M-Thursday 8 - 4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William R. Korzuch can be reached on (571) 272-7589. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Aristotelis M Psitos
Primary Examiner
Art Unit 2653



AMP